Small Business Innovation Research/Small Business Tech Transfer

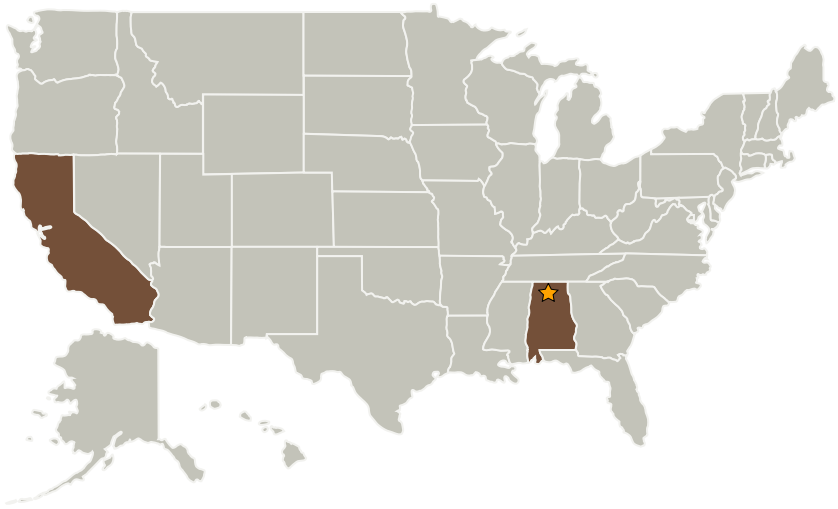
Innovative Deep Throttling, High Performance Injector Concept, Phase I

Completed Technology Project (2007 - 2008)

Project Introduction

Science and Technology Applications, LLC's (STA) vision for a versatile space propulsion system is a highly throttleable, high performance, and cost effective Liquid Oxygen/Hydrogen engine utilizing innovative design and manufacturing processes to simultaneously meet NASA's Space Exploration requirements. To that end, an innovative injector element concept is proposed consisting of axial flow coaxial injectors with pintle center post. This element concept is expected to provide deep throttle capability while maintaining performance over the entire range. Cold flow tests will be performed to characterize mixing and atomization distribution.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Science and Technology Applications, LLC	Supporting Organization	Industry	Moorpark, California

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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

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Primary U.S. Work Locations	
Alabama	California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Tedi Ohanian

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.1 Cryogenic Systems
    - TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors